**1.The key opportunities associated with introducing more granular locational pricing in GB;**

None obvious other than to help the Grid manage system constraints. But isn’t that their main *raison d’etre?*

**2. The key implementation challenges, risks and mitigations;**

LIQUIDITY

The big issue in the UK electricity market in the last few years (since the loss of Secure & Promote) has been liquidity.

There has been much criticism of suppliers not hedging their forward risk. However, this has had a lot to do with lack of liquidity in the market, due to the insufficiency of enough market participants on both side (i.e. buying & selling), a situation exacerbated by the introduction of the CFD regime, which concentrates selling (generator) liquidity into the very short-term, as a generator with a CFD now only needs to sell day ahead, as his CFD is measured against the day ahead price. This causes problems for anyone who needs to buy forward (as suppliers do if they want to match the price cap regime) as there aren’t as many sellers further out in the forward curve now, never mind 2 or 3 seasons ahead.

So, lack of forward liquidity in the current system, with its system wide wholesale price is a manifest problem. To then dilute that liquidity further by the introduction of nodal pricing will exaggerate this problem massively. Not only that, it will increase the chances of gaming / price manipulation by some players who have a material presence around some nodes compared to any other interests around the same node.

A mitigation would/could be if there were exchange traded markets, and they were localised around the nodes. However the UK has failed to get exchange traded power markets for the whole country up to now, never mind at local levels, and each would need a market maker in order to have functional liquidity.

INVESTMENT

Other problems will be that investment analysis will become extremely challenging, and thus also the bankability of projects. All investment cases for new generation currently rely on projected forward curves provided by consultancies such as Aurora, Poyry and Baringa. The removal of ‘national balancing point prices’ will make such projections (and thus modelling) next to impossible. There would be historical prices at the nodes, for sure – but trying to project forward prices for dozens of nodes will be pure guesswork and no finance house will be able to place any reliance on them. Furthermore, bankability will be extremely diminished if the financing partner can’t be sure that the generator can access the market whenever they want – at a price which justifies the investment case.

**3. The proposed approach to modelling zonal and nodal market designs**

One of the justifications deployed by the ESO’s paper/presentation states that reform is needed ‘because the wholesale market price is missing a key component: dynamic real-time locational signals’. We would argue that this isn’t the job of the wholesale market, it’s the job of the Balancing Mechanism, and in fact it’s the Balancing Mechanism that needs reforming - as a genuine Balancing Market.

So saying, as the paper does, that ‘the wholesale market price is missing a key component: dynamic real-time locational signals’ is incorrect.

The reason for saying this (about the BM) is because transferring the transmission risk problem from the Grid to the private sector – and that’s what nodal pricing seeks to do – is really outsourcing what we, and many other market participants, see as the Grid’s prime responsibility – that of balancing the grid.

PRICING & PERVERSE INCENTIVES

The paper talks about ‘the true local price’ without really saying this means – indeed, how can anyone know what ’the true local price’ is? The implication made is that an interconnector will import because the ‘national’ wholesale price makes it attractive, despite a low ‘true local price’. But if that is the genuine belief than it was madness to agree an interconnector being approved. And to say that ‘a similar dynamic exists for storage’ is lazy…batteries as we know store excess generation and thus help relieve a local system stress, not add to the problem - no-one sites a battery in an area where they are unlikely to get called under the BM, and presumably DNOs aren’t approving grid connections for batteries contrary to the broader interests of the grid.

The GridESO assessment then goes on to conclude ‘These issues are arising because the wholesale market price is missing a key component: near real-time, dynamic, locational signals’.

This is a logic extrapolation too far. One might equally argue ‘these issues are arising because the grid is missing 2 key components: (1) Sufficient transmission capability that recognises where the generation needed to enable the journey to Net Zero exists, and (2) a despatch mechanism that incentivises localised despatch at the optimal time for the grid. ‘Despatch’, which is a local issue, should not be conflated with the ‘wholesale market’ which has a broad array of economic and political influences. It’s crucial the wholesale market is kept separate from such considerations, for the reasons set out earlier.

The Grid paper assert that the wholesale price should reflect the marginal cost of meeting demand at a certain location. Why? It’s perfectly plausible to argue that it should not – and that the balancing mechanism should be evolved into a balancing market to do just that.

The paper asserts that nodal pricing will mean efficient dispatch thus reduce balancing costs, and that it will ‘Provide correct signals to interconnectors and storage’. All that will happen is that the balancing costs we currently have will simply turn up somewhere else, and be incorporated into wholesale prices under this system. And if nodal prices are insufficient, interconnectors and storage may end up not being used, meaning that important capacity will be under utilised, allowing plant further away from the nodes where the storage and IC is, to benefit, and even game the system.

The paper also suggests under nodal pricing that “Actions (will be) complemented by bilateral markets with over the-counter trades”. This is very unlikely to happen, because trading parties will be reluctant to commit to trades which involve delivery if, at the delivery moment, they have to engage in a nodal trade to ensure delivery. That’s an unhedgeable risk – so in fact this system would effectively remove liquidity providers from the market, and just leave the ESO as the only counterpart, offering short-term day ahead trades (or very short term) only. To suggest this will make a level playing field and reduce the burden for new entrants is entirely wrong, as they will have to negotiate the complexity of a very localised market, with multiple prices depending on where you are – compared with the single one-size fits all price we have now.

The paper argues that ‘Nodal pricing would facilitate locationally accurate signals needed by demand side assets to respond effectively.’ Wholesale prices already do that (incentivise demand load to respond). Granted the locational element is missing – but if that demand response is co-ordinated with DSO needs, then that locational element can be introduced without the disruption of removing a ‘national balancing point’ price – which removes transparency. In any case, the within day price variations the paper mentions are already heavily affected by DUoS charges – and they have a locational aspect. Furthermore, TNUOS charges reflect the regional split in generation, and Nodal pricing could make it worse. For example TNUOS Demand HH tariff in North Scotland is £20.27/kW but in the South West it is £61.67/kW. This differential could be increased with Nodal pricing depending on where the generation is based

The paper asserts that nodal pricing will remove/ reduce DUoS charges. It won’t - because, as the Grid surely knows, DUoS costs come about from distribution costs within the respective areas of the country, not because of transmission constraints.  Note that Ofgem are undertaking a Significant Code Review (SCR) into DUOS pricing so the outcome of the SCR may resolve any constraints

Then finally, to cap it all, the example of the Texas Ercot market as a worthy exponent of nodal pricing is deployed, blithely ignoring (a) the massive power outages of winter 21/22, and (b) the fact thatTexas is a badly connected state to other states, compared with the British state of interconnection, so it’s a specious example.